I claim:

1. A rotational test electrode assembly for use in a corrosive fluid environment comprising:

a) a generally cylindrical heat and electrically conductive member having an annular portion and a solid portion;

b) a heating device positioned inside of the annular portion and in heat exchanging relation with the solid portion of the conductive member;

c) a corrosion resistant external protective member that surrounds a portion of the heat conductive member in close-fitting relationship;

d) mounting means for attaching a rotational electrode in close-fitting heat and electrically conductive relation, the electrode being selected from the group consisting of cylindrical and disk electrodes; and

e) electrical terminal means for receiving a plurality of external electrical connectors that is mounted on the protective member opposite the portion of the conductive member on which the rotational electrode is mounted.

2. The rotational test electrode assembly of claim 1, wherein the mounting means are mating threaded surfaces.

3. The rotational test electrode assembly of claim 1 which further comprises a plurality of thermocouples in contact with the conductive member, each of the plurality of thermocouples having an electrical lead in contact with the terminal means.

4. The rotational test electrode assembly of claim 1, wherein the protective member comprises at least two portions, and at least one of the portions engages a surface of the rotational electrode in fluid-tight relation when assembled for operation.

5. The rotational test electrode assembly of claims 1 which further comprises mounting means proximate the electrical terminal means for coupling the assembly to rotational drive means.

6. The rotational test electrode assembly of claim 1, wherein the heating device is an electrical resistance heater.

7. The rotational test electrode assembly of claim 1, wherein the conductive member is brass.

8. The rotational test electrode assembly of claims 1, wherein the protective member is a formed from an electrically insulative polymer.

9. The rotational test electrode assembly of claim 1, wherein the polymer is selected from the group consisting of polytetrafluoroethylene, polyethylene, polypropylene, polyvinyl chloride, and copolymers thereof.

10. The rotational test electrode assembly of claim 1, wherein the mounting means for attaching the rotating disk electrode is a threaded aperture located in the end of the solid portion of the conductive member positioned to receive a cooperatively threaded shaft extending from the disk electrode, whereby the surfaces surrounding the aperture and the shaft are in close-fitting relation when assembled.

11. The assembly of claim 10, wherein the disk electrode includes a peripheral shoulder that engages a surface of the protective member in fluid-tight relation when assembled.

12. The rotational test electrode assembly of claim 1, wherein the mounting means for attaching the cylindrical electrode comprises a threaded surface formed on the conductive member and extending inwardly from the end defining the solid portion of the conductive member and a cooperatively threaded interior surface of the cylindrical electrode, whereby said cylindrical electrode is assembled on the conductive member to a position proximate the heating device.

13. The assembly of claim 12, wherein the protective member consists of a first cylindrical portion terminating in fluid-tight relation with one end of the cylindrical electrode and second portion that terminates in fluid-tight relation with the other end of the cylindrical electrode.

14. The assembly of claim 13, wherein the second portion is in the form of a cylindrical cup having an internally threaded sidewall that is cooperatively received on the threaded surface of the conductive member.

15. The rotational test electrode assembly of claim 1, wherein the mounting means comprises a reinforcing cylindrical flanged sleeve that is received in close-fitting relation on the interior of the protective member and the flange extends over the end of the protective member.

16. The assembly of claim 15, wherein the flanged sleeve is metal.

17. The assembly of claim 15, wherein the end of the sleeve positioned inside the protective member is displaced from the end of the annular portion of the conductive member by an electrically insulative air gap, whereby the electrode is electrically isolated from stray electrical currents during operation.

18. The assembly of claim 1 which further comprises an electrical lead extending from the interior surface of the annular portion of the conductive member to the electrical terminal.